ABSTRACT OF THE DISCLOSURE

The present inventors have discovered that the solution rheology of cellulose ethers prepared from cellulose pulp is altered by mercerizing and recovering cellulose pulp before preparing the cellulose ethers. For example, the solution viscosity of carboxymethyl cellulose (CMC) produced from mercerized and recovered cellulose pulp is significantly greater than that produced from non-mercerized cellulose pulp. The present invention provides a method of preparing cellulose ethers comprising the steps of (a) obtaining mercerized and recovered cellulose pulp, and (b) converting the mercerized and recovered cellulose pulp into the cellulose ethers. According to one embodiment, the cellulose pulp is southern softwood kraft and the mercerized cellulose pulp has a TAPPI 230 om-89 viscosity of at most 12 cP. This method, however, may be applied to all cellulose pulps, regardless of their viscosities, including those which, when mercerized, have a viscosity greater than 12 cP. The mercerized cellulose pulp is typically substantially free of cellulose III. Mercerized cellulose pulp prepared by this method has a greater percentage of crystalline cellulose II and a smaller crystalline area than that of non-mercerized cellulose pulp. The present invention also provides a method of preparing a cellulose floc comprising the steps of (a) obtaining mercerized and recovered cellulose pulp, and (b) treating the mercerized pulp to form the cellulose floc. Alternatively, the method comprises mercerizing and recovering a cellulose floc. Cellulose floc prepared by this method have a greater bulk density than cellulose floc prepared from similar non-mercerized cellulose pulp. Furthermore, the bulk density gain is greater than that expected from the coarseness (weight per unit of fiber length) gain from preparing a cellulose floc.